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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,705	12/20/2000	Juha Salokannel	460-009952-US(PAR)	9125

7590 07/31/2008

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EXAMINER	
HENNING, MATTHEW T	
ART UNIT	PAPER NUMBER
2131	

MAIL DATE	DELIVERY MODE
07/31/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/742,705	SALOKANNEL, JUHA	
	Examiner	Art Unit	
	MATTHEW T. HENNING	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 December 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

This action is in response to the communication filed on 5/21/2008.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 5/21/2008 have been fully considered but they are not persuasive.

Regarding the applicants' argument that Dent does not disclose a "set" of keys, the examiner does not find the argument persuasive. First, a set can consist of any number of elements, including one, or even zero. For example a set of keys is still a set if it only contains one key. Second, regardless of the fact that a set can contain only one element, the keystream of Dent reads on the "set" of keys, and the keys are the blocks of keystream data which are used for the encryption process. This is described in Col. 13 Paragraph 2 of Dent. As such, the examiner does not find the argument persuasive.

Regarding the applicants' argument that there is no "selecting one key from a set of keys at the access point" in Dent, the examiner does not find the argument persuasive. In Dent, as the keystream is generated the blocks of keystream data are selected for use in encrypting communications, as can be seen in Col. 13 Paragraph 2. Further, Col. 13 Lines 35-40 describe that for each block of keystream data, one half of the block is selected for encrypting the communications sent from the base station to the mobile station. As such, the examiner does not find the argument persuasive.

Regarding the applicants' argument that in Dent, upon handoff the data about the encryption key is not sent over the same broadcast control channel as it is periodically transmitted, the examiner does not find the argument persuasive. Dent clearly disclosed that

periodically the synchronization information was transmitted over the low data rate channel, and that upon handoff the synchronization information "is continued to be transmitted on a low bit rate channel", as can be seen in Col. 6 Paragraph 2). As such, the examiner does not find the argument persuasive.

All rejections and objections not presented below have been withdrawn.

Claims 1-21 have been examined.

Claim Objections

Claims 1-21 are objected to because of the following informalities:

Independent claims 1, 9, 19, and 21 each recite “selecting…from said set of encryption keys one to be used at a time”, or similar. This is not grammatically correct as the recitation does not specifically state what is being selected. In other words, “one” what? The examiner will assume for the purposes of searching prior art that the recitation was meant to read “one encryption key”.

Regarding independent claim 1, the language "one [encryption key] **to be used** at a time" is awkward as it appears that the phrase "to be used" is unnecessary.

Further regarding claim 1, the amendment to the claim language states “selecting at each of first and second access points…one [encryption key]…for encrypting information to be transmitted between said first access point and a mobile terminal". This limitation is neither consistent with the specification, nor consistent with the remaining independent claims. This language would require the second access point to select a key for the communications between

the first access point and the mobile terminal, while the specification and remaining claims recite that the first and second access points select an encryption key to be used for encrypting information to be transmitted between said first **and second** access points and a mobile terminal. In other words, each access point selects its own key. The examiner has assumed, for the purposes of searching prior art, based upon the specification and the amendments to the remaining claims, that claim 1 was meant to be amended to read "between said first and second access points and a mobile terminal".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 8, 9-13, 16, and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Dent (U.S. Patent 5,081,679) hereinafter referred to as Dent.

Regarding claim 1, Dent disclosed a method comprising: defining a set of encryption keys (See Dent Col. 5 Lines 51-57 wherein the keystream is the “set” of keys and the blocks of keystream data, see col. 13 lines 27-30 and 35-39, are the keys in the set), selecting at each of first and second access points (BS) from said set of encryption keys one to be used at a time for encrypting information to be transmitted between said first access point and a mobile terminal

(MS) (See Dent Col. 5 Lines 57-66), transmitting from the second access point, at intervals, data about the encryption key selected at the time over a broadcast control channel (low data rate channel) to the mobile terminal (See Dent Col. 6 Lines 45-61), setting up a data transmission connection between said mobile terminal and the first access point for the transmission of information (See Dent Col. 6 Lines 5-8 and Col. 6 Lines 45-61), and performing a handover, whereby a data transmission connection is set up between the second access point and the mobile terminal (See Dent Col. 6 Lines 12-15, 30-39), wherein in connection with the handover, said data is transmitted over said broadcast control channel to the mobile terminal about the encryption key selected at the second access point (See Dent Col. 6 Lines 45-61), and for the transmission of information said data about the encryption key such a broadcast control channel control field is selected which is not used as a general broadcast control channel control field (See Dent Col. 6 Line 45 – Col. 7 Line 2 and Col. 10 Paragraph 3).

Regarding claims 9 and 19-21, Dent disclosed a mobile communication system comprising: at least one mobile terminal (MS), at least a first access point and a second access point (BS); a set of encryption keys being defined in the communication system (See Dent Col. 5 Lines 51-57 wherein the keystream is the "set" of keys and the blocks of keystream data, see col. 13 lines 27-30 and 35-39, are the keys in the set); each of the access points comprising a circuit for selecting from said set of encryption keys one at a time to be used for encryption of information to be transmitted between each of said access points and said mobile terminal (See Dent Col. 5 Lines 57-66), and a circuit for transmitting data about the encryption key selected at the time at intervals from the second access point over a broadcast control channel to the mobile terminal (See Dent Col. 6 Lines 45-61); the communication system also comprising: a circuit for

setting up a data transmission connection between the mobile terminal and the first access point for the transmission of information (See Dent Col. 6 Lines 5-8 and Col. 6 Lines 45-61), and a circuit for executing a handover and setting up a data transmission connection between the second access point and the mobile terminal (See Dent Col. 6 Lines 12-15, 30-39), wherein the mobile communication system also comprises a circuit for transmitting over said broadcast control channel said data about the encryption key selected at the second access point to the mobile terminal in connection with the handover (See Dent Col. 6 Lines 45-61), and said circuit for transmitting is configured to select for the transmission of said data about the encryption key such a broadcast control channel control field which is not used as a general broadcast control channel control field (See Dent Col. 6 Line 45 – Col. 7 Line 2 and Col. 10 Paragraph 3).

Regarding claims 2 and 10, Dent disclosed that each encryption key in said set of encryption keys is allocated an encryption number (Block Counter Number), and said encryption number is used as said data about the encryption key selected (See Dent Claims 32-34).

Regarding claims 3 and 11, Dent disclosed information is transmitted in data frames, wherein the encryption key is changed in connection with each data frame (See Dent Col. 10 Lines 14-17).

Regarding claims 4 and 12, Dent disclosed that some of the data frames are used as common data frames for transmitting information from the second access point to more than one mobile terminal, wherein said data about the encryption key is transmitted in another data frame than said common data frame (See Dent Col. 9 Line 20).

Regarding claims 5 and 13, Dent disclosed said set of encryption keys is stored in said access points and in the mobile terminal (See Dent Col. 5 Lines 51-57).

Regarding claims 8 and 16, Dent disclosed that the first access point executes a forced handover, in which the mobile terminal communicating with said first access point is transferred to communicate with said second access point, said first access point transmits information about the handover to said second access point, and said second access point transmits said data about the encryption key selected at the second access point at the time to the mobile terminal. (See Dent Col. 6 Lines 12-22).

Regarding claim 17, Dent disclosed that said encryption keys are frame specific (See Dent Col. 10 Lines 14-17), and are generated at both ends of said transmission connection (See Dent Figs. 2-3 Elements 115 and 115', Col. 8 Lines 54-57, Col. 10 Lines 14-17, Col. 11 Lines 39-41, and Col. 12 Lines 23-32).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Dent as applied to claim 1 and 9 respectively above, and further in view of Kojima et al. (U.S. Patent Number 5,323,446) hereinafter referred to as Kojima.

Dent disclosed handing off a MS from a first BS to a second BS (See Dent Col. 6 Lines 12-15). However, Dent failed to disclose that the MS could initiate the handoff. Dent also

disclosed that during this handoff, the voice channel is seized for authentication purposes and no longer sends voice data (See Dent Col. 12 Paragraph 4).

Kojima teaches that if the mobile terminal requests the handoff to both the old and the new base station, then the handoff can ensure transparency to the data signals (See Kojima Summery of the Invention).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Kojima in the invention of Dent by having the mobile terminal send handoff requests to both the old and new base stations. This would have been obvious because one skilled in the art would have been motivated to preserve data integrity in the communication.

It would have been obvious in the combination of Dent and Kojima that the new base station sent its synchronization information to the mobile terminal at the time of handoff request. This would be obvious because the ordinary person skilled in the art would have been motivated to enable the mobile terminal to communicate securely with the new base station.

Claims 7 and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Dent as applied to claim 1 and 9 respectively above, and further in view of Gilhousen et al. (U.S. Patent Number 5,101,501) hereinafter referred to as Gilhousen.

Dent disclosed handing off a MS from a first BS to a second BS (See Dent Col. 6 Lines 12-15), but Dent failed to disclose that the MS could initiate the handoff. However, Dent disclosed the handoff signal originating at the old base terminal (See Dent Col. 6 Lines 12-15).

Gilhousen teaches that by providing the mobile unit with the ability to detect the need for handoff, the mobile unit can become more aware of its possible communication paths much

sooner and with less effort than if the information was relayed from its base station, which allows the mobile unit to find the cell site with the strongest signal and request handoff to that cell (See Gilhousen Col. 8 Paragraphs 4-5).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Gilhousen to the invention of Dent by having the mobile unit detect the need for a handoff and then request the handoff. This would have been obvious because the ordinary person skilled in the art would have been motivated to provide the mobile terminal with the strongest signal available.

It would have been obvious in the combination of Dent and Gilhousen that the new base station sent its synchronization information to the mobile terminal at the time of handoff request. This would be obvious because the ordinary person skilled in the art would have been motivated to enable the mobile terminal to communicate securely with the new base station.

Conclusion

Claims 1-21 have been rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW T. HENNING whose telephone number is (571)272-3790. The examiner can normally be reached on M-F 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew T Henning/

Primary Examiner, Art Unit 2131